

REMARKS

Claims 1-13 and 15-41 are pending in this application. Applicant has amended the claims to better comply with the Office's requirements as well as to more particularly set forth the claimed subject matter.

Rejection – 35 U.S.C. § 112 ¶ 1

The Office has rejected claim 41 under 35 U.S.C. § 112 ¶ 1 as containing subject matter not described in the specification for the reasons listed on page 3 of the Office Action. Applicant respectfully disagrees with this rejection.

While 35 U.S.C. § 112 ¶ 1 requires that the original application describe the invention, it does not require the terms of the claims to be identically described in the specification. All that is required is that the application reasonably convey the concepts embodied in the claimed subject matter. *In re Parks*, 30 USPQ 2d 1234 (B.P.A.I. 1994). In *Parks*, the applicant amended the claims to include the limitation that the decomposition process be performed “in the absence of a catalyst.” The Office rejected those claims because the original disclosure did not discuss catalysts in the decomposition process, either the presence or lack thereof. The Board of Appeals reversed, finding that the disclosure provided several examples of the process and none of them discussed catalysts even though the use of a catalyst would appear necessary. The Board held that the lack of disclosure of the presence of a catalyst necessarily conveyed to those of ordinary skill in the art that no catalyst was used. *Id.* at 1236.

The original disclosure of the present application clearly conveys the concept of solid inner and outer layers. The most visually apparent disclosure of solid layers can be seen by comparing Figures 15-16 with Figures 5-9. Figures 15 and 16 clearly show the process of

forming the inner and outer layers and the material used in forming these layers is provided with cut-outs that serve as initiators. Figures 5-9, however, depict that a similar material is not provided with cut-outs, but is a solid sheet of material.

Additionally, the specification textually conveys the use of solid inner and outer layers through negative implication. In describing the structural member, the specification states that the member may be made crushable in one aspect of the invention by adding initiators. See page 17, lines 5-8. The specification also describes the initiator as “a gap or discontinuity ... in the layer(s)” and refers to the cut-outs of Figure 15 (or any other device) that would disturb the continuity of the plurality of layers in the inner or outer portions. See page 19, lines 15-21. The specification also discusses these initiators when describing the method of the invention. See page 30, lines 7-16.

If initiators are used in one aspect of the invention, negative implication conveys that there must be another aspect that does not use initiators. Clearly, the aspect without initiators would be one in which there was no gap or discontinuity in the layers. Similar to *In re Park*, if there was a gap or discontinuity in this other aspect of the invention, it would have been discussed. Thus, via negative implication, solid inner and outer layers are clearly disclosed in the original application.

Accordingly the Office has not satisfied its burden of establishing this written description rejection. See M.P.E.P. § 2163.04. Applicant, therefore, respectfully requests withdrawal of the 35 U.S.C. § 112, ¶ 1 rejection of claim 41.

Rejection – 35 U.S.C. § 112 ¶ 2

The Office has also rejected claim 41 under 35 U.S.C. § 112 ¶ 2 as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention for the reasons listed on page 3. Applicant respectfully traverses this rejection.

A fundamental principle is that the applicant can be his own lexicographer. An applicant can define in the claims what he regards as his invention essentially in whatever terms, provided those terms are not used in ways that are contrary to the accepted meaning in the art. See M.P.E.P. § 2173.01. The definiteness of claim language must be analyzed not in a vacuum, but in light of the specification. See M.P.E.P. § 2173.02.

When the claims are read in light of the specification, especially in light of the above discussion regarding the description of solid, the definiteness of this claim term becomes readily apparent. It is clear that the specification is not referring to “solid” in the sense of the physical state, e.g., as compared to the liquid or solid state.

Thus, Applicant respectfully requests withdrawal of this ground of rejection.

Rejection – 35 U.S.C. § 102(e) over Logan

The Office has rejected claims 16, 20, and 34-36 under 35 U.S.C. § 102 (e) as being anticipated by Logan, for the reasons listed on pages 4 and 11-12 of the Office Action. Applicant respectfully traverses this rejection.

Independent claims 16 and 20 currently recite inner and outer sections made of metal-containing material, either or both of which contain a plurality of layers. Independent claim 34 (and 35-36) currently recite a structural member made by a process of providing (roll wrapping)

inner and outer layers using a continuous sheet, wherein either or both of the layers comprise a plurality of layers.

Thus, the independent claims that have been rejected over Logan all contain the limitation that the inner and/or outer layer (or section) contains a plurality of layers. The Office, however, has not substantiated that Logan teach or suggest such a plurality of layers. Indeed, it would be difficult for the Office to show that Logan teaches or suggests a plurality of layers in light of the fact that the structural member of Logan contains an inner pipe and an outer pipe, both of which contain a single layer.

Thus, the Office has not established that Logan anticipates claims 16, 20, and 34-36. Accordingly, Applicant respectfully requests withdrawal of this ground of rejection.

Rejection – 35 U.S.C. § 102(b) over Wilkinson

The Office has rejected claims 16 and 20 under 35 U.S.C. § 102 (b) as being anticipated by Wilkinson for the reasons listed on pages 5 and 12 of the Office Action. Applicant respectfully traverses this rejection.

As noted above, independent claims 16 and 20 currently recite inner and outer sections made of metal-containing material, either or both of which contain a plurality of layers. The Office, however, has not substantiated that Wilkinson teach or suggest such a plurality of layers. And it would be difficult for the Office to show that Wilkinson discloses a plurality of layers when the structural member of Wilkinson contains only a single layer in both the inner and outer sections.

Thus, the Office has not established that Wilkinson anticipates claims 16 and 20. Accordingly, Applicant respectfully requests withdrawal of this ground of rejection.

Rejection – 35 U.S.C. § 102(b) over Mann

The Office has rejected claims 34-35 under 35 U.S.C. § 102 (b) as being anticipated by Mann for the reasons listed on pages 5 and 12-13 of the Office Action. Applicant respectfully traverses this rejection.

Independent claim 34 (and 35) currently recites a structural member made by a process of providing (i.e., roll wrapping) inner and outer layers using a continuous sheet, wherein either or both of the layers comprise a plurality of layers. The Office recognizes that Mann does not disclose the same process steps, but argues that these claims are product claims and where there is a substantially similar product, the burden of proof is shifted to the applicant to establish that his product is patentably distinct. The Office, however, can hardly substantiate that Mann discloses a substantially similar product having a plurality of layers since the structural member of Mann contains an inner pipe and an outer pipe, both of which contain a single layer.

Thus, the Office has not substantiated that Mann anticipates present claims 34 and 35. Accordingly, Applicant respectfully requests withdrawal of this ground of rejection.

Rejection – 35 U.S.C. § 102(b) over Frease

The Office has rejected claims 34-35 and 41 under 35 U.S.C. § 102 (b) as being anticipated by Frease for the reasons listed on pages 6 and 13 of the Office Action. Applicant respectfully traverses this rejection.

Independent claim 34 (and 35) currently recite a structural member made by a process of providing (i.e., roll wrapping) inner and outer layers using a continuous sheet, wherein either or both of the layers comprise a plurality of layers. Independent claim 41 currently recites a

structural member comprising a plurality of solid contoured inner layers and a plurality of solid contoured outer layers.

The Office apparently argues that Frease discloses “a plurality of solid contoured inner [and outer] layers.” However, Frease describes only one inner layer and one outer layer. Figure 3 of Frease shows four independent tubes (outer cylindrical tube 11, inner cylindrical tube 12, and intermediate cylindrical tubes 18 and 19) spaced by a truss system. See page 1, lines 84-86. The inner and outer layers of Frease are described as single tubes rather than a plurality of layers. In one embodiment of Frease, the supporting and connecting intermediate structure is modified to include tubes and trusses instead of just trusses. This modification of the intermediate structure, however, does not change Frease’s outer or inner layers. These inner and outer layers of Frease remain the same: each layer is made of a single tube.

Moreover, it will be difficult for the Office to show that Frease teaches a plurality of layers. Frease refers to the inner layer 12 and outer layer 11 as: “the outer cylindrical tube 11, and the inner cylindrical tube 12” (page 1, lines 57-59, 84-85); “the differentially formed outer tube 11 and inner tube 12” (page 2, lines 10-12); and “the outer polygonal tube 11 and the inner polygonal tube 12” (page 2, lines 24-25). Every time Frease mentions an inner and outer layer, he refers to a single tube rather than a plurality of layers.

For the above reasons, the Office has not substantiated that Frease anticipates claims 34-35 and 41. Accordingly, Applicant requests withdrawal of this ground of rejection.

Rejection – 35 U.S.C. § 103 over Logan

The Office has rejected claims 12-13, 15, 17-19, and 39-41 under 35 U.S.C. § 103(a) as being unpatentable over Logan for the reasons listed on pages 7-8 and 13-14 of the Office Action. Applicant respectfully traverses this rejection.

The Office continues to argue—via Official Notice (which Applicant has disagreed with on the record)—that light metals, composite materials, and stainless steels are conventionally used in piping and, therefore, using them in Logan’s structural configuration would have been obvious to one of ordinary skill in the art. In other words, the Office is using Official Notice a second time to establish the level of ordinary skill, a necessary element in an obviousness determination. Applicant respectfully disagrees with the Office’s position, including the use of Official Notice as evidence of the motivation to modify Logan.

Nevertheless, in an effort to expedite prosecution, Applicant has amended the claims as noted above. All of the Office’s arguments and Official Notice, however, do not substantiate that Logan discloses a plurality of layers in the inner or outer pipe. And for the reasons mentioned above, it is unlikely that the Office can substantiate that the skilled artisan would have been motivated to modify Logan so that the inner or outer pipe contained a plurality of layers.

For the above reasons, the Office has not substantiated that the skilled artisan would have considered claims 12-13, 15, 17-19 and 39-41 obvious in light of Logan. Accordingly, Applicant requests withdrawal of this rejection.

Rejection – 35 U.S.C. § 103 over Frease

The Office has rejected claims 12-13, 15-20, and 39-41 under 35 U.S.C. § 103(a) as being unpatentable over Frease for the reasons listed on pages 8-10 and 14-15 of the Office Action. Applicant respectfully traverses this rejection.

The Office continues to argue—via Official Notice (which Applicant has disagreed with on the record)—that composite materials and stainless steels can both be used in piping and, therefore, using them in Frease’s structural configuration would have been obvious to one of ordinary skill in the art. Applicant respectfully disagrees with the Office, including the use of Official Notice as evidence of the motivation to modify Frease.

Nevertheless, in an effort to expedite prosecution, Applicant has amended the claims as noted above. All of the Office’s arguments and Official Notice, however, do not substantiate that Frease discloses a plurality of layers in the inner or outer pipe. And for the reasons mentioned above, it is unlikely that the Office can substantiate that the skilled artisan would have been motivated to modify Frease so that the inner or outer pipe contained a plurality of layers.

For the above reasons, the Office has not substantiated that the skilled artisan would have considered claims 12-13, 15-20, and 39-41 obvious in light of Frease. Accordingly, Applicant requests withdrawal of this rejection.

Rejection – 35 U.S.C. § 103 over Cappa

The Office has rejected claims 12-13, 15-21, and 31-41 under 35 U.S.C. § 103(a) as being unpatentable over Cappa for the reasons listed on pages 10-11 and 15 of the Office Action. Applicant respectfully traverses this ground of rejection.

Despite Applicant's arguments to the contrary, the Office continues to contend that it would have been obvious to modify Cappa to replace a composite sheet with a metal sheet. The Office admits that the alternate use of aluminum (in place of a composite material) is not desirable from a weight standpoint. See Office Action, p. 15. The Office maintains, however, that substituting composite materials for aluminum is an admission of an alternate use and, therefore, an obvious variation.

Applicant stresses that this admitted undesirability weighs against a conclusion of obviousness. Namely, the skilled artisan, when confronted with this admitted weight disadvantage, would not have been motivated to make the proposed substitution of Al for the composite material. The skilled artisan would not have wanted to use aluminum as the resulting increased weight would decrease the efficiency of the spacecraft and would increase the environmental stresses on the spacecraft during launch. The Office has not countered with any advantage for convincing the skilled artisan to make the proposed substitution.

The Office's rejection is nearly the same as that rejection overturned in *In re Scott*, 323 F.2d 1016, 139 USPQ 297 (CCPA 1963). In this decision, the claims were drawn to a hollow fiberglass shaft. The claims differed from the prior art in the use of a paper as the core of the shaft, as compared to a light wood or hardened foamed resin core disclosed by the prior art. The Board upheld the Office's rejection. The Court of Custom and Patent Appeals reversed, holding that components which are functionally or mechanically equivalent are not necessarily obvious in view of one another. This court also found that the use of a light wood or hardened foam resin core did not suggest the use of a paper core. *Id.*; See also M.P.E.P. § 2144.06

For the above reasons, the Office has not substantiated that the skilled artisan would have considered claims 12-13, 15-21, and 31-41 obvious in light of Cappa. Accordingly, Applicant requests withdrawal of this ground of rejection.

Allowable Subject Matter

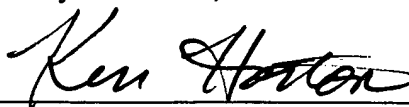
Applicant thanks the Office for indicating that claims 1-11 and 22-30 are allowable.

CONCLUSION

For the above reasons, as well as those of record, Applicant respectfully requests the Office to withdraw the pending grounds of rejection and allow the pending claims.

If there is any fee due in connection with the filing of this Amendment, including a fee for any extension of time not accounted for above, please charge the fee to our Deposit Account No. 18-0013\40010-0004.

Respectfully Submitted,

By 
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